

Serial Number 09/778,333 filed February 7, 2001

REMARKS

Claims 1 through 60 are pending in this action. Claims 1, 19 and 49 are independent claims. Claims 2 through 28, 20 through 48 and 50 through 59 are dependent claims. Upon entry of this election and amendment, claims 1 through 18, as amended, will be pending.

Restriction Requirement

In the Office action mailed June 5, 2002, the Examiner issued a requirement for restriction and divided the claims of the application into eight groups. These groups were defined as follows:

Group I, claims 1 through 18, drawn to a process of mixing molten component and a molten thermoplastic polymer to form a heterogeneous blend and melt processing the heterogeneous blend,

Group II, claims 19 through 27, drawn to an end-capped polyamide;

Group III, claims 28 through 38 and 43 through 44, drawn to a heterogeneous blend;

Group IV, claims 39 through 42, drawn to a composite of rubber and fiber;

Group V, claims 45 through 48, drawn to a composite of rubber and fiber;

Group VI, claims 49 through 50, drawn to an end-capped polyolefin;

Group VII, claims 51 through 56, drawn to a heterogeneous blend; and

Group VIII, claims 57 through 60, drawn to a composite of rubber and fiber.

Applicants provisionally elect with traverse to prosecute the claims of Group I, namely claims 1 through 18, drawn to a process of mixing molten component and a molten thermoplastic polymer to form a heterogeneous blend and melt processing the

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heterogeneous blend. Applicants respectfully traverse the requirement for restriction on the ground that all claims are linked by the inventive concept of the molten component found in each independent claim.

Applicants respectfully request that the Examiner examine the claims of Group I with the generic linking claim 1, and if allowable, that the Examiner also examine in this same application the claims of Group II through VIII.

Election of Species Requirement

Additionally, the Examiner requires that the Applicant make three elections of species, as follows.

With respect to the species for the molten component that are end-capped polyamide, end-capped polyolefin and polyolefin, applicants elects the end-capped polyolefin for prosecution on the merits. Claims readable thereon appear to be claims 1-3, 8, 9, 13-18, 49-60.

With respect to the species for the thermoplastic polymer that are polyester, polyolefin and polyamide, applicants elects polyester for prosecution on the merits. Claims readable thereon appear to be claims 1-14 and 18-60.

With respect to the species for the composite that are tire, tire cap-ply, v-belt and conveyor belt, applicant elects tire cap-ply for prosecution on the merits. Claims readable thereon appear to be claims 45, 47, 57, and 59.

Amendments

Applicants have amended the specification and claim 1 to correct a typographical error. Claim 1 as filed recited a CSP value of at least 0.8. Applicants have amended claim 1 by correcting the CSP value to at least 8. Support for this amendment is found at

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page 15, Table I of the specification. Corresponding corrections have been made to the specification. No new matter has been added by these amendments.

Applicant amended the specification to correct a typographical error made in the identification of a patent, as indicated at page 6, line 7 of the specification. No new matter is added by this amendment.

An early and favorable action on the merits is solicited earnestly.

Should the Examiner have questions or comments regarding this application or this amendment, Applicants' attorney would welcome the opportunity to discuss the case with the Examiner.

This is intended to be a complete response to the Office action mailed June 5, 2002.

Respectfully submitted,

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Official

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I hereby certify that this correspondence is being deposited with the United States Patent & Trademark Office via facsimile to Examiner Patricia A. Short, Group Art Unit 1712, at RightFax No. 703-872-9310 on July 2, 2002.

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Version with markings to show changes made

In the specification:

Please replace the paragraph beginning at page 6, line 8, with the following rewritten paragraph:

--Another approach for fiber production is blends as disclosed in US Patent 4,066,587 [4,006,587] wherein a polyamide (formed from a long-chain dibasic acid containing at least 18 carbon atoms and a diamine) is added at 0.01 to 20 weight percent to polyester. Example VII represents the closest art in US Patent 4,006,587 and it is outside this invention because the polyamide is not end-capped and hence will react with the polyester thereby lowering its viscosity and impeding movement of the additive to the fiber surface. See Japan Patent Publication 4336-1971 (published February 3, 1971) teaching melt spinning polyester at 10-40 weight percent in polyamide. The following Table lists other blends:--

Please replace the paragraph beginning at page 8, line 4, with the following rewritten paragraph:

--This invention responds to the need for thermoplastic articles which maintain their inherent mechanical properties and cost structure yet have a permanent outer surface that has selectively varied chemical functionality. The major benefit is to overcome inherent deficiencies related to: (1) article incompatibility with different composite matrices, (2) inadequate environmental stability (light, chemical, etc.), and (3) general surface-related end-use characteristics such as poor abrasion resistance, excessive friction, etc. The present invention describes the additives, the fiber-making process, and the resulting novel articles. The process involves

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(a) adding a substantially organic molten component with CSP value of at least 8 [0.8] to a molten thermoplastic polymer and mixing to substantially uniformly disperse the molten component in the molten thermoplastic polymer and form a heterogeneous blend wherein

(i) the melt viscosity of the molten component is substantially less than the melt viscosity of the molten thermoplastic polymer; and

(ii) the amount of the molten component in the molten thermoplastic polymer is up to about ten percent by weight based on the heterogeneous blend; and

(c) melt processing the heterogeneous blend wherein the molten component preferentially locates near the surface of the molten thermoplastic polymer and substantially no chemical reaction occurs between the molten component and the molten thermoplastic polymer.—

In the claims

1.(Amended) A process comprising the steps of:

(a) adding a substantially organic molten component with CSP value of at least 8 [0.8] to a molten thermoplastic polymer and mixing to substantially uniformly disperse said molten component in said molten thermoplastic polymer and form a heterogeneous blend wherein

(i) the melt viscosity of said molten component is substantially less than the melt viscosity of said molten thermoplastic polymer; and

(ii) the amount of said molten component in said molten thermoplastic polymer is up to about ten percent by weight based on said heterogeneous blend; and

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- (b) melt processing said heterogeneous blend wherein said molten component preferentially locates near the surface of said molten thermoplastic polymer and substantially no chemical reaction occurs between said molten component and said molten thermoplastic polymer.

In the Abstract

Please replace the paragraph starting at page 53, line 5, following the Abstract of the Invention, with the following rewritten paragraph:

--We have developed a process and product which provide thermoplastic articles featuring a permanent outer surface which has selectively varied chemical functionality while maintaining the inherent mechanical properties of the base fiber. The process comprises the steps of:

- (a) adding a substantially organic molten component with CSP value of at least 8 [0.8] to a molten thermoplastic polymer and mixing to substantially uniformly disperse the molten component in the molten thermoplastic polymer and form a heterogeneous blend wherein

- (i) the melt viscosity of the molten component is substantially less than the melt viscosity of the molten thermoplastic polymer; and

- (ii) the amount of the molten component in the molten thermoplastic polymer is up to about ten percent by weight based on the heterogeneous blend; and

- (b) melt processing the heterogeneous blend wherein the molten component preferentially locates near the surface of the molten thermoplastic polymer and substantially no chemical reaction occurs between the molten component and the molten thermoplastic polymer.--